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Project No. 12C1135 | Sheet 1/1

Project METAL BANK | Date 3/23/2015

Subject WALER REINFORCEMENT CALCULATIONS | By JJC

- WALER REPAIR/REINFORCEMENT TO OCCUR IN DESIGN ZONE 2
- FROM RACLLC ANALYSIS REPORT DATED 8/26/2014, LINEAR LOAD ON WALER IN FINAL CONDITION (AFTER BERM IN PLACE) ≈ 6.5 KIPS/FT
- ASSUME
  - A MAX SPAN OF 21-ft
  - EXISTING CHANNELS IN THIS ZONE ARE MC12x31 PER DESIGN DRAWINGS
  - CHANNELS SHALL ONLY CARRY A SMALL PORTION OF THE LOAD
- DETERMINE REINFORCEMENT
  - $M_{MAX} = \frac{wl^2}{8} = \frac{(6.5\ K/ft)(21ft)^2}{8} = 359\ K\cdot ft$
  - $S_{req'd\ (CHANNEL)} = \frac{(359\ k.ft)(12"/1')}{(0.6)(36\ KSI)} = 199.4\ in^3$
  - (2) MC12x31, $S = 67.4\ in^3 << 199.4\ in^3$ N.G.
  - SISTER (2) MC12x31 w/ (2) W SHAPES
    - ↳ TRY (2) W12x53, $S = 141.2\ in^3$

      $\frac{(141.2\ in^3)(0.6)(50\ KSI)}{(12"/1')} = 353\ K\cdot ft$

      ∴ CHANNELS MUST TAKE $359 - 353 = 6\ K\cdot ft \rightarrow$ OK